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ABSTRACT

The conflict between the interests of commercial outfitters and private boaters in the use of whitewater rivers is examined. A discussion is presented on the literature on scarcity, allocation, and conflict among groups. These concepts are applied to the allocation of public resources on whitewater rivers. The conflicting interest groups are described, and an evaluation is offered of the current system for allocating use to these groups. (JD)

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Scarcity, Conflict, and Equity in Allocating Public Recreation Resources

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INTRODUCTION

Resource scarcity and the concern for equity in social solutions are not new issues, but they have become more salient in recent years. Legislation now requires that projects using federal resources include an assessment of social consequences, and the courts have become a forum for discussing the effects of policies on various interest groups. This situation provides opportunities for sociologists to learn more about conflict, equity, and decision-making.

Whitewater rivers have becomes increasingly popular, and in many cases managing agencies have established carrying capacities which limit the number of people using a given area. These limits create relative scarcity when the demand for the resource (the opportunity to run the river) exceeds the administratively defined supply. Allocation decisions have created conflict between commercial outfitters (who run the river as a business) and private boaters (who want to run their own trips).

This paper begins with a brief discussion of the literature on scarcity allocation, and conflict among groups. It then applies these concepts to the allocation of public resources on whitewater rivers, describing the "publics" involved and evaluating the current system for allocating use to these groups.

NORMS FOR ALLOCATING RESOURCES

Allocation only becomes an issue when resources are scarce, i.e., when the quantity demanded exceeds the available supply. Scarcity, then, requires distributive justice, which means allocating resources in a "fair" manner (Homans, 1961). Injustice can result from the values on which allocation is based, the rules for allocation, the implementation of the distribution process, or from the exclusion of certain groups from decision making (Deutsch, 1975).

The most common criteria for distributive justice are equality, equity, need, and/or social efficiency. Equality means that individuals have the same right to certain benefits. There are two ways of achieving equality: 1) give all persons an equal share, or 2) give all persons an equal chance to obtain benefits. Suppose that six persons were equally entitled to six hunting permits. The first form of equality would give each person 1 permit; the second might assign each person a number from 1 to 6, roll a die, and give the winner all six permits. Where benefits are divisible, the first method is probably the best; where benefits are not divisible (such as 27 persons wanting 1 permit), the second is usually preferred (Pauly and Willett, 1972).

Equality is not always "fair," however, so some situations may require other allocation norms. Equity refers to the ratio of "inputs" to "outcomes" for each individual (Walster et.al. 1973). The contention is that if inputs are unequal then outcomes should be proportionately unequal. Equitable distribution is considerably more complex than equal distribution because there are many dimensions for measuring both inputs and outcomes. For example, it appears inequitable that a resident

Alaskan pays $25.00 for a brown bear tag while non-residents pay $250.00. But residency connotes additional inputs (such as taxes), and non-residents may place a higher value on the right to hunt (increasing their outcomes).

Recognizing need is another way of trying to assure fair rather than equal distribution; some individuals may have different requirements than others. Distributing larger shares of food to those who are deprived is an obvious example, and in game management some permit systems give priority to subsistence hunting. Similarly, land owners are often given special access privileges on rivers which have private inholdings. Need is often disregarded in favor of equality or equity because need is difficult to define.

Social efficiency is maximized when a resource is put to its most highly valued use. Fine pealer logs can be used for firewood, but it is more efficient to use them for making plywood because people can substitute less valuable resources for use as firewood. Similarly, some people would give up golf, skiing, fishing, sex, desserts, and a $1,000 bill to run a particular river, while others would just as soon visit Disneyland, climb a mountain, or watch a stock car race. Tastes vary, and people value different experiences differently. But if the goal is to maximize the value of the resource, use needs to be shifted to those who value river running the most.

To illustrate, imagine 5 river access permits to be distributed among 10 persons. If the value placed on the permit by each individual differed, ranging from 1 to 10, maximum efficiency would occur when those with potential benefits of 6, 7, 8, 9, and 10 were given permits (total benefit = 40). If anyone else were substituted, net benefit would decrease.

To summarize, equality, equity, need, and social efficiency are all important factors in resource allocation. Equality is probably the simplest criterion; "all" it requires is equal opportunity or equal outcome. Equity, need, and efficiency are more complex because they require some means of assessing costs and benefits (value) for different individuals. In market economics, value is expressed in monetary terms, although economists recognize that dollars may have different values for different people (e.g. rich people vs. poor people). The assessment of value becomes increasingly difficult with non-market commodities such as recreation. Here the criteria for comparing values may include money, time, opportunities foregone, the effort invested in acquiring skills or equipment, or the availability of substitute activities. The complexity of these factors makes equitable and efficient allocation quite difficult. Deciding on a norm for allocating is also a problem. Past research suggests that equity is preferred when production or efficiency is the goal, while equality is stressed when units of comparison are unclear or when the goal is to reduce conflict (Leventhal, 1976; Deutsch, 1975).

CONFLICT AMONG GROUPS

Scarcity of resources creates a situation in which several factors foster the development of conflict (Deutsch, 1973). The competition implicit in scarcity is an obvious factor. Social change is another factor which shifts the basis of various interests and creates a situation in which conflict is likely to develop. Finally, anything which identifies or increases group differences will promote solidarity within groups and increase the likelihood of conflict with out-groups. The cohesiveness within a group is also increased by physical proximity, amount of communication, success of the group, and the perception of threat

from or conflict with outside forces. People are more likely to engage in collective action to further group goals when group size is small, the logistical costs of meeting and organizing are relatively low, and potential individual rewards are relatively large (Olson, 1975). In-group solidarity doesn't necessarily cause conflict between groups, but it does set the stage. Conflict may be decreased when people belong to a variety of groups which have different, cross-cutting interests.

As conflict develops, the power of a group to achieve its goals becomes an issue (Deutsch, 1973). Groups which are satisfied with existing relationships develop rationales for maintaining the status quo; it is likely that they will see change as a threat which would leave them in a powerless position. Groups with less power are more dependent on others. They may attempt to change power relationships by increasing their resources, finding allies, increasing the costs of power for more powerful groups, or inducing powerful groups to use their power benevolently (often through appeals for equality or equity). Changes of the status quo are more likely to be accepted if all groups expect to gain than if one will gain at another's expense.

The allocator's role varies greatly, but is likely to include preservation and protection of resources, specification of the goals or values on which allocation is based, definition of rules for allocation and proper resource use, implementation of the allocation system, delegation of the authority to re-allocate, and supplying additional resources whenever possible. The allocator is obviously in a position to either alleviate or exacerbate conflict.

These concepts will help in understanding conflicts over river use, and many findings from earlier studies are mirrored in the private-commercial controversy. For example, a river allocation system may have to be designed quite differently depending on whether the goal is equality or equity. The conditions for conflict among groups also exist in the river allocation situation, including scarcity, the potential for unpredictable change, the official designation of distinctly different groups (private and commercial), and differing degrees of group solidarity and willingness to engage in collective group action. It also appears that the private and commercial groups have different amounts of power and different interests regarding the status quo, and both groups have used the courts to make unilateral actions by managing agencies costly if not impossible. Finally, agencies have discovered from sometimes painful experience the difficulties inherent in the role of allocator.

ALLOCATION SYSTEMS FOR RIVER USE

Not long ago, there were very few people running whitewater, and the opportunity to float a river was essentially an infinite resource which was available to anyone. But use has increased dramatically on popular whitewater rivers. During the period from 1967 to 1972, the number of river runners per season grew from 2,000 to 16,000 in Grand Canyon, from 2,500 to 17,000 in Dinosaur National Monument, and from 1,300 to 4,000 on the Middle Fork of the Salmon River (Interagency Whitewater Committee, 1976). Whether demand will continue to increase is a matter of speculation, but a variety of factors suggest that it will (see, for example, Parent 1978).

Increases in use have brought problems of crowding, conflict, and resource deterioration. Managing agencies have responded by establishing carrying capacities, thereby limiting use. Once use is limited, however, space on the river becomes a finite resource. If the number of river runners exceeds the established use limit, a mechanism is needed for deciding "who gets to go." Allocating river access has become one of the most controversial aspects of river management, and public resource agencies have received the dubious privilege of overseeing the process.

It is important to distinguish between the carrying capacity and allocation issues, although the two are closely related. Carrying capacity determines the appropriate number of people for a particular kind of river experience; it involves setting a limit. Allocation distributes this limited number of river running opportunities among users; it means deciding who will get to go when demand exceeds capacity.

There are several kinds of resources involved in river running, and it is helpful to distinguish among them. Resources can be categorized as physical or non-physical. Physical resources are "things" which have value to people, including natural objects (such as trees and water) and man-made objects (such as cars and buildings). Non-physical resources are less tangible assets such as education, knowledge, labor, or aesthetic qualities. River running requires both kinds of resources. Physical necessities include natural objects such as the river and canyon as well as man-made objects such as rafts, oars, and sleeping bags. Non-physical resources include river running skill and, on regulated rivers, access rights to the river.

The point is that all these resources are necessary for a river running experience. The public at large owns the river-canyon resource, and managing agencies provide access privileges for groups or individuals. River running equipment and skills are provided by outfitters or by users themselves.

PRIVATE AND COMMERCIAL GROUPS

For the purposes of allocation, users have traditionally been divided into two groups, "commercial" and "private." Commercial trips are offered by outfitters who are in the business of running rivers, and they have pre-existing access rights. Passengers pay a fee, and the outfitter provides the necessary equipment, skill, and access. A part of trip revenue is profit for the outfitter.

Private trips, by contrast, are organized by non-commercial "do it yourselfers." A group of private users possesses the necessary equipment and skill, but must acquire access privileges from the agency on a trip-by-trip basis. Private permits are granted on the assumption that trip

members are sharing costs, with no one realizing financial gain from the venture (Interagency Whitewater Committee, 1976).

Allocations to these two groups have generally been made in one of two ways. The first is a simple 50-50 split; there are two groups, so each should get half of the "user pie." Although this division is equal at the group level (because there are two groups), it is usually arbitrary and would be inequitable if, for example, one group were much larger than the other.

The other means of "dividing the pie" has been to base the division on established use during some base line period. A period is selected, the percentage of use in each sector determined, and those percentages become the basis for future allocations. This kind of division can also be arbitrary, since it does not allow for changes in the composition of the user population. The obvious problem with both options is that there is no reliable information about the amount of use desired by each sector. Equitable allocation requires either information about demand or a system which can operate independent of such information.

As the competition for space on rivers has increased, arguments have developed between the private and commercial sectors about the amount of use each group "ought" to have. The major points in the controversy have been discussed elsewhere (Shelby and Nielsen, 1976), but they will be briefly summarized here. In favor of commercial trips, it is argued that: 1) outfitters provide a service to that portion of the public which "wants to be outfitted;" 2) outfitters have faced use limitations similar to those imposed on private boaters; 3) managing agencies feel some degree of obligation to assure that commercial trips are available for those

who wish them; 4) outfitters have made significant contributions to equipment development and resource preservation; and 5) it is more convenient for managers to deal with a small group of professionals. Arguments in favor of private trips are: 1) the "demand" for private trips have increased in recent years, generally with no increase in use allocations; 2) the higher cost of commercial trips is discriminatory against private "do it yourselfers;" 3) recreational interests in public lands are held in trust for the "indefinite public," and should not be allocated to commercial interests which can monopolize them, and 4) commercial trips encourage use by people who otherwise would not run rivers, thus displacing those who have developed river related skills on their own. Private users also argue that permit application procedures are more cumbersome for them than they are for commercial users.

Distinguishing User Publics

In considering these arguments, it is most useful to distinguish three different segments of the "user public" (Shelby and Nielsen, 1976). Commercial outfitters for, one segment. and they represent their own profit interest in addition to any more generalized interest in river running. Outfitters are relatively well organized because their numbers are low (17 on the Snake, 21 in Grand Canyon), they are usually concentrated geographically, most belong to formal associations which meet regularly, they interact regularly with agency personnel, and the potential individual gain from collective action is high (an outfitter stands to retain or acquire an allocation which is large enough to support a business and which may be worth a considerable amount of money). The number of outfitters on a given river is generally limited to those who were "in business" when the managing agency decided to regulate use. Each outfitter is given a specific allocation of use (user days, launches, etc.)

which he/she controls. The size of the allotment depends on a variety of factors, usually including previous use.

Commercial passengers and private users form two additional segments, and they share a recreational interest in running rivers. Commercial passengers presumably want to be "outfitted," a service provided by outfitters which has usually included procuring a space on the river. Commercial passengers thus have little reason to interact with managing agencies, and they have been notably absent in public involvement concerning allocation. They are not usually organized except by the mailing lists of outfitters. It is often assumed that outfitters represent the commercial passenger group, an assumption that may result in the confusion of outfitters' profit motives with the recreational motives of their passengers.

Private boaters want to run their own trips. In the past their only organizations were local activity-oriented clubs, but recently ad hoc groups (such as the Wilderness Public Rights Fund) have formed around the allocation issue. In spite of a shared "cause," most factors work against unified political action. Private boaters are numerous, geographically scattered, most do not meet regularly, they do not have regular meetings with managers, and the potential individual gain from collective action is low (a person usually stands to gain access individually or for a single trip). Private permits have traditionally been acquired by a trip leader, who in turn selected other trip members. Some rivers now require trip members to be listed on the permit application, and some limit the percentage which can be changed.

ALLOCATION GOALS OF DIFFERENT GROUPS

The preceding section suggests that different groups may have different ideas about what an allocation system should accomplish. To explore this, we met separately with managers (Interagency Whitewater Committee), outfitters (Idaho Outfitters and Guides), and private users (an informal group organized by John Garren and ourselves). At each meeting, the group was asked to brainstorm about and then prioritize allocation goals. We later developed a comprehensive list of 16 goals integrated from the three sessions. The list was sent to the original participants and others, asking them to select their top five goals. The goals of each group were prioritized using a simple averaging procedure. The comprehensive list, response rates, and the complete rankings for each group can be found in Appendix 1.

Managers, outfitters, and private boaters share several concerns. All three groups felt that an allocation system should be: simple and easy to understand, with a minimum of "red tape;" efficient, minimizing "no-shows" and making unused launches available to other users; and responsive to the relative amount of use "demanded" by the private and commercial sectors. These goals ranked in the top six for each group (see Table 1), and they provide points of consensus on which a system could be based.

Aside from this agreement, the three groups have quite different concerns. Managers felt that a system should: be defensible to diverse groups and fit legal and budgetary constraints; maximize use (fill available "slots") within environmental or social carrying capacities; be flexible (allow for changes in plans, group composition, weather, etc.); and provide business stability for outfitters. These goals reflect the

TABLE 1

Ranked Allocation Goals of Different Groups

Managers

1) The permit system should be simple and easy to understand, with a minimum of "red tape" for users, outfitters, and managers.

2.5) The permit system should be defensible to diverse groups and fit legal and budgetary constraints.

2.5) The permit system should be responsive to the relative amount of use "demanded" by the private and commercial sectors.

4) The system should be efficient by minimizing "no-shows" and making unused launches available to other users.

5) The permit system should attempt to maximize use within environmental or social carrying capacities (i.e., an attempt should be made to fill all available "slots" on the river).

6.5) The system should be flexible (allow for changes in plans, group composition, weather, water levels, etc.).

6.5) The permit system should provide business stability for outfitters.

Outfitters

1) The permit system should provide business stability for outfitters.

2) The permit system should be simple and easy to understand, with a minimum of "red tape" for users, outfitters, and managers.

3) Procedures for obtaining a permit should be different: Outfitters should distribute the commercial users' permits and the managing agency should distribute the private users' permits.

4) Penalize applicants who attempt to "cheat" the system; hold users and outfitters responsible for "breaking the rules" (including bogus applications, no-shows, environmental damage, etc.).

5) The system should be efficient by minimizing "no-shows" and making unused launches available to other users.

6) The permit system should be responsive to the relative amount of use "demanded" by the private and commercial sectors.

Private Users

1) Procedures for obtaining a permit should be the same for all users, regardless of whether they want to float a river on their own or with an outfitter.

2) Permits should be issued to individuals, who then arrange the group, either private or commercial, with which they want to float the river.

3) The permit system should avoid encouraging use by limiting advertising or promotion of river running.

4) The permit system should be responsive to the relative amount of use "demanded" by the private and commercial sectors.

5.5) The permit system should be simple and easy to understand, with a minimum of "red tape" for users, outfitters, and managers.

5.5) The system should be efficient by minimizing "no-shows" and making unused launches available to other users.

constraints and political pressures faced by managers as well as their responsibility for accommodating unforeseen changes.

Outfitters have a somewhat different point of view. Their primary concern was that the system provide stability for their businesses. Another major concern was that procedures for obtaining a permit should be different, with outfitters distributing permits to commercial users and the managing agency distributing them to private users. Outfitters also felt that the system should penalize those who attempt to cheat, holding users and outfitters responsible for breaking the rules. The first two goals reflect outfitters' need for some kind of stability and their desire to maintain control of commercial allocations. The third goal may indicate a feeling that private users are beating the system or acting irresponsibly at outfitters' expense.

The top two goals of private users were that procedures for obtaining a permit should be the same for all users and that permits should be issued to individuals, who then arrange either a private or commercial trip. The first is essentially a concern for equality in what private users feel to be an unequal and inequitable system, the second represents the alternative permit system most often supported by this group. Private boaters also felt the system should avoid encouraging use by limiting the promotion of river running. Many feel that advertising by commercial outfitters is crowding the rivers with commercial passengers who would be just as happy with some other form of recreation, displacing private users who presumably place a higher value on the experience.

SPLIT ALLOCATIONS FOR PRIVATE AND COMMERCIAL USE*

When it became necessary to limit use, most agencies simply developed allocation systems which approximated the way permits had been issued in the past; no one questioned the desirability of separate allocations for private and commercial use. But as demand continued to exceed capacity, users first contested the percentage allocated to each sector and later argued against the concept of split allocations. These attempts to change the system had potential for success because allocation is political.

As was discussed earlier, increased demand is likely to increase the cost of gaining access (money in the commercial sector, time and hassle in the private). Some people will be priced out of commercial trips. These people can either engage in political action to change the system, attempt to substitute a private trip, or substitute a different recreational experience (another river trip or a non-river experience). But if commercial passengers place a relatively low value on the river experience, they would not engage in political activity; they would be more likely to substitute a private trip or try some other experience. In the latter case they no longer concern us. But if "priced out" commercial passengers attempt to substitute a private trip, everyone in the private sector has a lower probability of getting a permit. This means that private users who place a relatively high value on the experience are more likely to be denied access.

*This section makes extensive use of reports from Parent (1978a) and Baden and Stroup (1978). Their contributions are acknowledged here to avoid interrupting the text with frequent references.

Private users then have three options: engage in political action, substitute a commercial trip, or substitute a different recreation experience. Private boaters usually have a more substantial investment in equipment and experience, so they are unlikely to give up river running. They also appear reluctant to go on commercial trips (primarily, we think, because they want to run their trips independently, although cost is often mentioned). That leaves political action, and private boaters have engaged in efforts to get permits for themselves as well as to change the allocation system.

Essentially, then, high-valuing private boaters have invested part of their consumer surplus in political action, and commercial outfitters have invested part of their economic rents in similar activity. Commercial passengers have generally avoided political action, choosing instead to pay more money, substitute a private trip, or substitute some other activity. The preceding analysis has been theoretical rather than empirical, although it appears to fit what is known and makes sense in terms of economic and political theory.

Are Split Allocations Defensible?

The current allocation system represents the way things have been done in the past. It is already developed and operating, and it is familiar to managers, outfitters, and users. But it now appears that split allocations have important unintended consequences; the system should be carefully evaluated in terms of allocation goals such as equality, equity, efficiency, and need.

The split system isn't equal. Procedures for gaining access are different for commercial and private users, who "pay" in different currencies (money versus time and hassle). On high demand rivers such as the Colorado in Grand Canyon, commercial users apparently have the potential for more trips (unequal shares) and a greater likelihood of getting on a trip (unequal probability).

As far as we know, no river permit systems evaluate inputs in an attempt to make outcomes equitable. As will be discussed later, some hunting permit systems do so by giving preference to groups such as residents or those who have been unable to get a permit in the past. In these systems, inputs are defined as taxes paid or the effort expended on unsuccessful applications, and outcomes are defined as the chances of getting a permit; those with greater inputs have greater outcomes. Achieving equity of a more profound nature would require some very difficult assessments. For example, current river systems allow commercial users to pay with money while private users pay with planning and the time involved in getting a permit. Because the currencies are different, the inputs are hard to compare, even if the amounts of money and time could be specified. Comparing outcomes is at least equally problematic; the more profound benefits obtained from a river experience are extremely difficult to measure and evaluate.

The extent to which split allocations are efficient is unknown. Efficiency requires an assessment of the value of the resource so that it will be used by those who value it most highly. The current system may be efficient within the commercial sector; people willing to pay are those who get to go, and others are priced out. Within the private sector, however, lotteries tend to provide equal allocation, which is inefficient because it does not favor those who place a higher value on the experience. It is unlikely that split allocations are efficient between the two sectors, but it is difficult to tell because the two groups pay in different currencies.

Current systems recognize need in several ways. Most agencies provide for access by property owners, and some have set up special allocations for social service or educational groups. It is often argued that outfitters or lodge owners require river access for their livelihood, which is also a recognition of need.

SPACE ON RIVERS AS A SCARCE RESOURCE

The central question is, "Who gets to use the scarce resource, and how will those people be chosen?" The "scarce resource" is space on the river, which managers measure in units called "user days."[1] In American society, the usual means for allocating scarce resources is the market system. In such a system, an excess of quantity demanded should cause the quantity supplied to increase and/or the price to rise. There is an increasing number of people who want to run rivers, but the supply of available spaces has been limited by carrying capacities. If use were allocated by a market system, then, prices would increase until users unwilling to pay more were eliminated and the quantity demanded equalled the prescribed capacity.

It appears that the market mechanism is free to operate in the commercial sector. Although the supply of spaces on the river is fixed by managing agencies, it is possible to raise the "price" of a trip (either in dollars or by other methods such as requiring a reservation, collecting deposits, or cutting services). Good business practice would suggest such an increase rather than spending time and money turning away customers who couldn't be accomodated. It should also be noted that the quasi-monopolistic position enjoyed by outfitters is a result of agency limitations on number of outfitters and amount of use rather than a result of monopolistic practices by outfitters themselves.

[1]A user day is here defined as one person using the river for part or all of one day. Other units have also been used (e.g., visitor nights, trip launches), and this discussion applies to them as well.

The point is that the increase in price is an economic "rent" which reflects the value of space on the river (as distinct from the outfitter's services, which also have a value). User days have taken on a monetary value, in spite of the contention by managing agencies that "passenger days are not a saleable commodity" (Interagency Whitewater Committee, 1976). User days can in some cases be legitimately traded (Yearout, 1975), it is rumored that they can be bought or sold, and it seems obvious that the net worth of an outfitter's business (i.e., equipment, real estate, mailing lists, etc.) is greatly enhanced if an allotment of user days can be assured.

The recent sale of several outfitting businesses provides some limited information about the value of use allocations. It is difficult to specify the price of the use permit by itself because the agencies' refusal to recognize a permit transfer requires the buyer and seller to pretend that only a business (equipment, buildings, etc.) is being sold. But Table 1 combines our best estimate of black market permit prices with information about average trip size and length and the assumption that the cost of the permit will be amortized over 5 years. The results suggest that permits have considerable value and that value varies depending on demand for the resource. The values range from about $10.00 per user day in Grand Canyon to $2.25 - $4.75 in Hells Canyon.

In the private sector, space on the river has also been limited by use restrictions. In addition, however, the "price" of a user day is fixed (at zero) because trip members are sharing expenses only. The result is that there is no market mechanism to distribute the limited number of user days. Managing agencies have had to invoke various non-market allocation mechanisms to distribute private permits at no charge, including "first come, first served," one trip per season, one trip every

TABLE 2

Estimated Value of Commercial Allocations

River	Price of Permit [a]	Allocation (Passenger Days Per Year)	Value per Passenger Day [e]	Percent of Commercial Allocation used in 1978	
				Launches	User Days
Colorado (Grand Canyon)	$500,000 (1978)	10,000	$10.00	--	99%
Middle Fork Salmon (Idaho)	$ 19,000 (1977)	518[b]	$ 7.25	83%	55%
Rogue (Oregon)	$ 1,250 (1978)	52[c]	$ 4.75	73%[f]	66%[f]
Snake (Hells Canyon)	$ 10,000 (1977)	845[d]	$ 2.25	40%[g]	--
	$ 20,000 (1979)	845[d]	$ 4.75	57%	30%

a Represents our best estimate of price for permit only.

b Assumes 6 launches x 16 passengers each x 5.4 days on river = 518

c Assumes 1 launch x 13 passengers x 4 days on river = 52

d Assumes 13 launches x 13 passengers each x 5 days on river = 845

e Assumes 5 year amortization with no interest, rounded to nearest .25.

f These are 1977 figures; 1978 permit system used a "common pool" which made it non-comparable with systems on the other rivers.

g This is for the 1976 season, on which the sale was based.

other season, and lottery drawings. The value of access (the difference between what private users would be willing to pay and what they actually pay) is captured by private users as consumer surplus, which represents another form of economic rent. It is rumored that user days can also be bought or sold in the private sector, but such transactions are difficult to track down.

The upshot of this is that what was supposed to be a "free public resource" has become an economic commodity (as a result of its scarcity). It was originally intended that space on the river, which managing agencies held in trust, was to be distributed to the public at no charge. The agency's job was to see this was done in a fair and efficient manner, without undue damage to the resource. In the commercial sector, there was the added responsibility of assuring that the outfitting services available were of high quality. However, allotting blocks of the scarce commodity (user days) to either commercial outfitters or private trip leaders apparently defeats these original intentions, since it allows someone outside the agency to reallocate user days to individual users. By doing so the allocation system essentially allows individuals, particularly outfitters, to acquire and control access rights to public river running resources.

The notion that allocations have no economic value is simply untrue; it should be replaced with the frank recognition that access rights to rivers are worth a great deal. But this recognition creates a major problem: Who should capture the value of a public resource? Should access rights be given away, thereby "losing" their value? Should agencies sell access to users? Should agencies sell access to entrepreneurs, who in turn re-sell to users? Should agencies give access to entrepreneurs, who in turn sell to users?

The answers to these questions are based on values, and research can't make value judgments for either managers or the public. But research can specify the consequences of different alternatives, thereby providing better information on which to base decisions. The foregoing discussion suggests that current allocation systems take public resource access rights and give them at little or no cost to outfitters and private trip leaders, who are then in a position to reallocate (and perhaps sell) those rights back to the public.